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L. Lang, professor of mathematics and physics; Mr. W. Ramirez, professor of Spanish; Miss E. Prat, instructor in biology.

THE Agricultural College of Utah announces the organization of a course in agricultural engineering with departments of irrigation and drainage, road building, farm machinery, farm buildings, hydraulics, rural sanitation and public health. The following appointments to the faculty have been made: R. B. West, C.E. (Cornell), professor of engineering, and Frank Daines, A.M. (Harvard), professor of history, to succeed Professor Harrison Dale, who has accepted a similar position in the Washington University at St. Louis.

THE Syracuse University Medical School has called the following men to its corps of instruction: as assistant professor of bacteriology, Leverett Dale Bristol, A.B., M.D. (Johns Hopkins), of St. Paul, Minn.; as instructor in the department of histology, Earl V. Sweet, A.B., M.D. (Cornell), of Phoenix, N. Y.; as instructor in surgery, Albert G. Swift, M.D. (Syracuse), of New York City; as instructor in pathology, John W. Cox, M.D. (Syracuse). This position was secured by scholarship. At the suggestion of the dean, Colgate University has signified its intention of permitting students to take the senior year in a registered medical college *in absentia*, such students to receive the bachelor's degree upon the presentation of a certificate from the college of medicine attended to the effect that his work has been done satisfactorily.

DR. H. K. ANDERSON, F.R.S., fellow of Gonville and Caius College, Cambridge, known for his research on the physiology of the nervous system, has been elected master of the college, in succession to the late Rev. E. S. Roberts.

MISS JANET LANE-CLAYPON, M.D., D.Sc. (London), lecturer in hygiene and physiology at Battersea polytechnic, has been appointed lecturer in hygiene and physiology at King's College for Women, London.

THE following appointments have been made at the University of Manchester: Richardson lecturer in mathematics, Mr. W. D.

Evans, M.A., now lecturer in mathematics at Hartley College, Southampton; junior assistant lecturer in physics, Mr. Harold Robinson, B.Sc.; demonstrators in anatomy, Mr. J. B. Stopford, M.B., and Mr. Manfred Moritz.

DISCUSSION AND CORRESPONDENCE

PHILIPPINE SHARKS

TO THE EDITOR OF SCIENCE: I have just received two memoirs on Philippine sharks by Dr. H. M. Smith.¹ In the first of these *Pentanchus profundicolus* is described as a new genus and species, and the representative of a new family of Notidanoids; in my opinion this fish belongs to the family Scyliorhinidae, and if, as I suspect may be the case, the absence of the first dorsal fin is abnormal or accidental, it is a *Scyliorhinus* closely related to the species numbered 11 to 14 in my synopsis.² The second paper deals with the Squalidae, and on comparing with my synopsis³ I find that the new genus *Nasisqualus* corresponds to a section of *Centrophorus* which has already received the names *Acanthidium* and *Deania*; a second new genus, *Squalidus*, is valid, differing from *Euprotomicrus* in the structure and position of the first dorsal fin.

C. TATE REGAN

BRITISH MUSEUM (NATURAL HISTORY)

ARAGONITE COATING GRAVEL PEBBLES

TO THE EDITOR OF SCIENCE: On a trip to Clinton, Massachusetts, with Professor George H. Barton, I found in a gravel pit, directly opposite the station, a number of large pebbles with the white coating of calcium carbonate that one often sees. A hemispherical radiate growth up to 5 mm. long, at certain points, attracted my attention, and I took a couple of pebbles home. The coating, to my great surprise, proved both by Meigen's test with cobalt nitrate and by optical tests (-ex. o cleavage parallel elongation) to be aragonite.

Though I have made no goniometer investigation, the divergent prismatic crystals with

¹ *Proc. U. S. Nat. Mus.*, XII., 1912.

² *Ann. Mag. Nat. Hist.* (8), I., 1908, p. 453.

³ *Ann. Mag. Nat. Hist.* (8), II., 1908, p. 39.

striated ends appear to be bounded by *b*, *m* and *k*, as well as other faces.

I am now wondering how commonly such coatings are aragonite rather than calcite.

ALFRED C. LANE

TUFTS COLLEGE, MASS.,

June 18, 1912

SCIENTIFIC BOOKS

Theoretical and Physical Chemistry. By S. LAWRENCE BIGELOW, Ph.D., Professor of General and Physical Chemistry in the University of Michigan. New York, The Century Co. 1912. 14 × 22 cm. Pp. xiii + 544. Price \$3.00.

In his preface, the author points out that, after gaining some knowledge of the facts in the first year or two's study of chemistry, students are ready to find both profit and pleasure in a more philosophical study of generalizations and principles than was possible at an earlier stage. Truly, the modern beginners' course in general chemistry, although it is in part descriptive and detailed, yet fully deserves the appellation "general" in Ostwald's sense, and might well have served for a course in physical chemistry some fifteen years ago (p. 4). Selecting the generalizations from the masses of details accumulated in all the special branches of chemistry, however, "our subject makes a specialty of these generalizations," and therefore stands to chemistry in the same relation as philosophy does to all sciences. Instead of "Theoretical and Physical Chemistry," the book might, indeed, have well been entitled "The Philosophy of Chemistry," if for no other reason because of the catholic and philosophic viewpoint of its author. After reading his prefatory acknowledgments to his former teachers Ostwald and Nernst, one looks rather for Germanic philosophy; but what one finds is Anglo-Saxon. For those who require to have this distinction characterized for purposes of physical science it may be stated, with Duhem, that the Anglo-Saxon temperament wishes to construct a tangible model of sticks and strings, while the Germanic carries the logic to its necessary conclusion, however unfathomable.

In regard to the subjects treated, any criticisms as to omissions is disarmed by the statement that "the most difficult part of the task has been the selection of topics to omit." In spite of well-chosen omissions, however, a very wide field is nevertheless covered, lightly, often with elegance and always with clearness. The titles of some of the thirty chapters which the book contains are as follows: The Scientific Method; Fundamental Definitions; Unit Quantities of Chemistry and Chemical Notation; Chemical Energy, Affinity and Valence; Spectroscopic Evidences and the Theory of Inorganic Evolution; Luminiferous Ether and Vortex Rings; Radioactivity and the Electron Theory; Solid Solutions; Colloidal Solutions; Liquefaction of Gases; Some Elementary Thermodynamic Deductions; Actinochemistry. In an elementary text, beaten tracks have, in the main, to be followed, for "classifications and methods of presentation which have proved satisfactory by their results should not be tampered with unless for clearly good cause. My colleagues will therefore recognize many familiar statements and arrangements in the following pages"—which remark again disarms criticism of the author, at least, for an occasional misstatement. Examples of the side-heads to paragraphs may serve to show that the topics selected for treatment are not by any means identical with those common to other similar text-books; such side-heads are: Relativity Principle, Table of Energies and their Factors, Landolt's Experiments, Significance of Valence, Archimedes Spiral [of the elements], Protyle, Emission of Light and Temperature, Stefan's Law, Bolometer, Protoelements, Zeeman Effect, Canal Rays, The Value of e/m , Stokes' Law, Siendentopf and Zsigmondy's Results, Brownian Movement, Kundt's Method, "Etch Figures," Agglutination, Three Ways to Damage a Storage Cell, etc. The paragraph on page 141 on the deduction of Avogadro's theory might, by the way, be omitted or modified in the light of Rayleigh's note on page 326 of Maxwell's "Heat."

After all, the manner, in an elementary text, is perhaps even more important than the mat-